

Appl. No. 10/524,991
Examiner: MAI, HAO D, Art Unit 3732
In response to the Office Action dated July 1, 2008

Date: December 1, 2008
Attorney Docket No. 10114961

AMENDMENTS TO THE DRAWINGS

The attached two (2) sheets of drawings amend Fig. 1 and introduce a new Fig. 9 depicting the embodiment recited in claim 8.

Attachment: Replacement Sheets (2)

REMARKS

Responsive to the Office Action mailed on July 1, 2008 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

The specification, drawings, and claim 4-6 are objected to. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman et al (US 2,789,352, hereinafter "Wiseman") in view of van Leuwen et al (4,008,189, hereinafter "Leuwen") and further in view of Furuzono et al (EP1508586 A1, hereinafter "Furuzono"). Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and Furuzono and further in view of Kliger (US 3,911,922, hereinafter "Kliger"). Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and Furuzono and further in view of Denmark (US 4,831,676, hereinafter "Denmark").

In this paper, the specification, drawings and claims are amended as described in further detail below. New claims 9 and 10 are added. Support for the new claims can be found, for example, in original claim 1 and Fig. 3 of the application as originally filed. Thus, on entry of this amendment, claims 1-10 remain in the application.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Amendments to the Specification and Drawings

The specification is amended to include reference numbers 1a and 1b (the "exterior wall" and "hollow interior region" of core 1) and 14 (the "water retaining material").

Fig. 1 is amended to include reference numbers 1a and 1b. Fig. 9 is added. Fig. 9 depicts the embodiment recited in claim 8.

The term "undulated" is canceled from the claims. Furthermore, the term "sponge" in claim 8 is amended to "material" to correspond with the specification.

Applicant submits that the objections to the specification and drawings are thereby overcome.

Objections to the Claims

Claims 4-6 have been amended according to the suggestion of the Examiner. Applicant submits that the objections to claims 4-6 are thereby overcome

Rejections Under 35 U.S.C. 112

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant submits that the rejections are overcome or mooted by the amendments to the claims set forth in this paper.

Rejections Under 35 U.S.C. 103(a)

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and further in view of Furanzo. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and Furuzono and further in view of Kliger. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiseman in view of van Leuwen and Furuzono and further in view of Denmark. To the extent that the rejections apply to the claims now pending in the application, they are respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

As amended, claim 1 recites a prophylactic chip, mounted on a top of a dental rotary instrument for cleaning, polishing, and burnishing teeth, comprising:

a cup-shaped core with canopy (semispherical), cylindrical, cupped, conical, inverted conical, or disk profile, the core comprising an exterior wall and a hollow interior region;

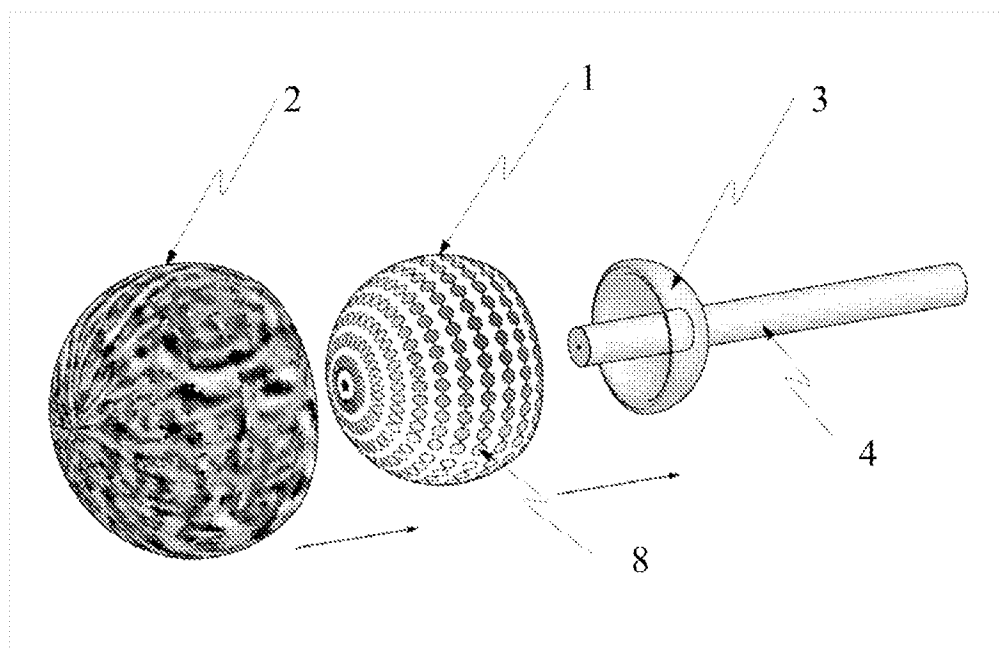
a shaft containing a connecting means for connecting the prophy chip to the dental rotary instrument to avoid vibration around a rotation axis of the core during rotation;

a hydrophilic grindstone sponge covering the exterior wall of the core, wherein the hydrophilic grindstone sponge comprises a grindstone therein; and

an latch plate fixing the hydrophilic grindstone sponge to the core;

wherein the hydrophilic grindstone sponge is immersed in water prior to operation or absorbed saliva during operation without using a polishing paste to dissipate heat generated by friction.

Thus, claim 1 recites an arrangement of a core having an exterior wall and hollow interior region and a sponge covering the exterior wall of the core. The sponge is fixed to the core with a latch plate. Claim 4 further recites that the exterior wall of the core is "reticular or porous." An embodiment of this arrangement in an exploded view is found in Fig. 7:



It is noted that sponge 2 is received on core 1 to cover the exterior wall of core 1 and fixed thereto by latch plate 3. Also see, for example, Fig. 1. By this arrangement, the sponge may take various 3-D shapes (for example, cup, cone, cylinder). As noted on page 2 of the application, "the contact side of the sponge which lines the core may be deformed to the core

shape during cleaning and polishing." Also see Figs. 1-3. Furthermore, the sponge may be attached to the core without adhesives. For illustrative purposes only, Attachment A shows sponge received on a core and fixed thereto by a latch plate according to an embodiment of the present invention.

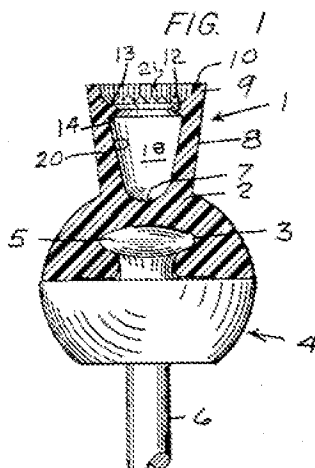
Claims are to be construed in accordance with the intrinsic evidence reflected in the claims themselves, the prosecution history, and the specification, as well as permissible extrinsic evidence such as dictionaries. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*en banc*). For the reasons discussed below, Applicant submits that the arrangements recited in claims 1 and 4 are not taught or suggested in the prior art when the above terms are properly construed.

Wiseman discloses a tooth polishing cup, wherein the cup is formed of soft rubber. The cup comprises: a reservoir 18 containing tooth polishing material 19; a shank 6; a bulbous end 5; and a shank-equipped latch piece 4 fixing the bulbous end to shank 6. Leuwen discloses a hydrophilic polyurethane sponge. Furuzono discloses a polyurethane-base material containing grindstone $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$.

In the rejections, the Examiner identifies reservoir 18 as the alleged "core" of claim 1. The Examiner alleges that bulbous end 5 "is capable of being folded into the interior of the alleged "core" 18 and that the bulbous end 5 covers the alleged "core" 18. The Examiner identifies elements 3/4/5 of Wiseman (i.e., the socket 3, shank piece 4, and bulbous end 5) as the alleged "latch plate" of the claim. The Examiner further argues that it would have been obvious to replace the bulbous end 5 of Wiseman with Van Leuwen's hydrophilic polyurethane sponge. See page 4 of the Office action.

In Wiseman, a tooth polish cup formed by soft rubber and may be provided with a base 2 that is formed with a socket 3 for securing the cup onto a shank piece 4. The shank piece has a bulbous end 5 adapted to be held in socket 3. A reservoir 18 is provided for the tooth polishing material. See, column 2, lines 10-15 and column 3, lines 9-11 of Wiseman.

Fig. 1 of Wiseman is reproduced below:



Claim 1 recites a cup-shaped core comprising an exterior wall and a hollow interior region, and a hydrophilic grindstone sponge covering the exterior wall of the core. Applicant notes that bulbous end 5 of Wiseman does not cover the exterior wall of the reservoir 18 (i.e., the alleged “core” of the claims), as recited in claim 1. To the contrary, bulbous end 5 extends from shank piece 4 and is inserted into socket 3 of base 2 to secure shank piece 4 to base 2.

Thus, even if Wiseman were modified in the manner set forth in the Office action (i.e., replacing element 5 of Wiseman with Van Leuwen’s hydrophilic polyurethane sponge), it would not meet the requirement that the hydrophilic grindstone sponge covering the exterior wall of the core, as recited in claim 1.

Applicant further submits that there would be no motivation to replace bulbous end 5 of Wiseman with a hydrophilic polyurethane sponge. The purpose of bulbous end 5 in Wiseman is to establish a mechanical connection between shank piece 4 and base 2 by fitting bulbous end 5 into a complementarily shaped socket 3. Col. 2, lines 10-21. There would be no reason to use a hydrophilic polyurethane sponge to establish and maintain this connection. To the contrary, Applicant submits that hydrophilic sponges would make an unsuitable material for fitting into a socket and maintaining a mechanical connection, particularly in an environment

with liquids that may be absorbed into the sponge during polishing and cause it to lose rigidity and shape.

In this regard, the Examiner is reminded that “in order to rely on a reference as a basis for rejection of an Applicant’s invention, the reference must either be in the field of Applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” MPEP 2141.01(a) citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore, “the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” MPEP 2143.01 citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Moreover, “the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant’s disclosure.” MPEP 2143 citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The applicant submits that motivation to combine Wiseman with van Leuwen is provided by the Applicant’s disclosure, and not by the prior art. There is simply no reason that one would replace bulbous end 5 with a sponge in the prior art itself.

Applicant further notes that if the Examiner is in fact referring to base 2 of Wiseman as the element which “covers” the alleged “core” 18 and which is replaced by van Leuwen’s sponge, the rejections nonetheless fail for essentially the same reason. Reservoir 18 is a cavity formed in base 2. Therefore, the exterior wall of reservoir 18 is base 2. Base 2 does not cover the exterior wall of reservoir 18, and therefore does not meet the limitation of an element “covering the exterior wall of the core,” as recited in claim 1.

In addition, there would be no motivation to replace base 2 with a sponge material insofar as base 2 is a rubber material intended to define a reservoir 18. A hydrophilic sponges would make an unsuitable material for defining a cavity and maintaining a mechanical connection with the bulbous end 5 and shank piece 4 of Wiseman, particularly in an environment with liquids that may be absorbed into the sponge during polishing.

Applicant further notes that in the rejections, the Examiner identifies bulbous end 5 as the element covering the alleged “core” 18 (i.e., the “sponge” when combined with van Leuwen) and part of the alleged “latch plate”. See page 4 of the Office action. Applicant submits that the

same element cannot be both a “sponge” and a “latch plate” fixing the sponge to the core, as recited in claim 1.

Claim 4 recites that the exterior wall of the core is “reticular or porous.” This feature is not found in Wiseman, which teaches that the reservoir 18 is a hollow region formed in a rubber base 2. There is no teaching or suggestion that the material in which reservoir 18 is formed is reticular or porous. In this regard, Applicant notes that the term reticular defines “a fine network or netlike structure,” while porous defines a material “having minute spaces or holes through which liquid or air may pass.” Clearly, neither the reservoir 18 itself nor the plastic material forming base 2 in which it is formed is either “reticular” or “porous.” The single opening at the top of reservoir 18 does not make reservoir porous any more that the opening at the top of a coffee cup makes the cup porous. Furthermore, ridges at the edge of a single opening do not make a structure porous.

In this regard, Examiner is reminded that the pending claims must be given their “broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). Plain meaning refers to ***the ordinary and customary meaning given to the term by those of ordinary skill in the art.*** MPEP 2111 *et seq.* In other words, the Examiner is not free to employ any interpretation of the terms of a claim. Instead, the words of a claim must be interpreted according to their plain meaning, i.e., in a manner so as to give the terms the ordinary and customary meaning a person of ordinary skill in the art would employ.

Applicant respectfully submits Examiner’s apparent construction “reticular” and/or “porous” to cover a single opening in a rubber base goes well beyond the ordinary and customary meaning of the words.

It is therefore Applicant’s belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claims 1 and 4. For at least this reason, a *prima facie* case of obviousness cannot be established in connection with these claims. Furthermore, as it is Applicant’s belief that a *prima facie* case of obviousness is

not established for claims 1 and 4, the Examiner's arguments in regard to the dependent claims will not be addressed here. Allowance of claims 1-6 is respectfully requested.

New Claim 9

New claim 9 recites that the hydrophilic grindstone sponge is folded over an edge of the wall into the hollow interior region of the core and gripped by the latch plate. Applicant notes that bulbous end 5 of Wiseman is not "folded over" an edge of the wall and "into" reservoir 18. Thus, even if Wiseman were modified in the manner set forth in the Office action (i.e., replacing element 5 of Wiseman with Van Leuwen's hydrophilic polyurethane sponge), it would not meet this requirement.

Applicant submits that claim 9 is allowable for this alternate and independent reason.

New Claim 10

Claim 10 recites that the core is directly connected to the shaft. Applicant submits that the cited references fail to teach or suggest this feature. To the contrary, Wiseman teaches that shaft 6 is connected to shank 4, which in turn is connected to base 2 in which reservoir 18 is formed. See Fig. 1.

Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so. The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to Deposit Account No. **502447**.

Respectfully submitted,

/Nelson A. Quintero/

Nelson A. Quintero

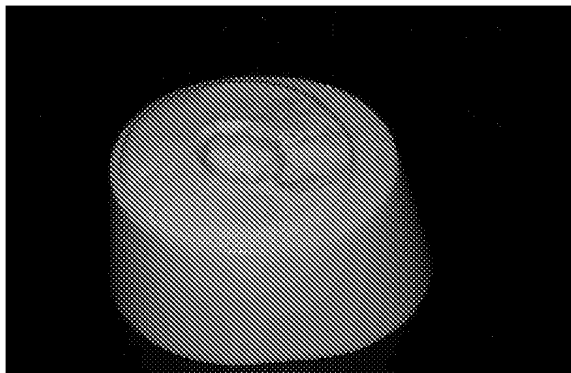
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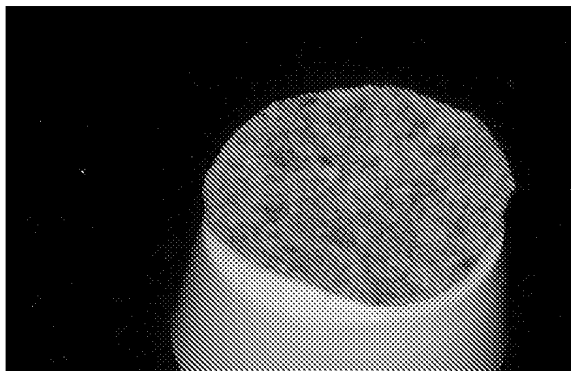
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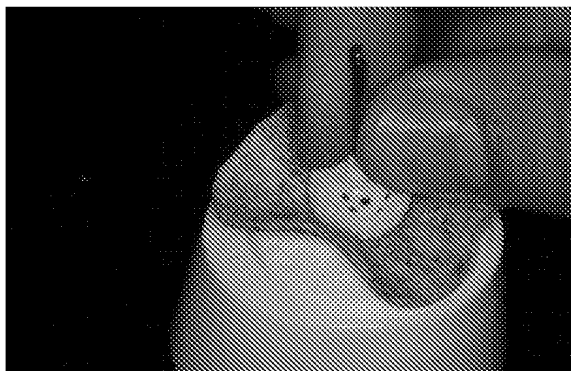
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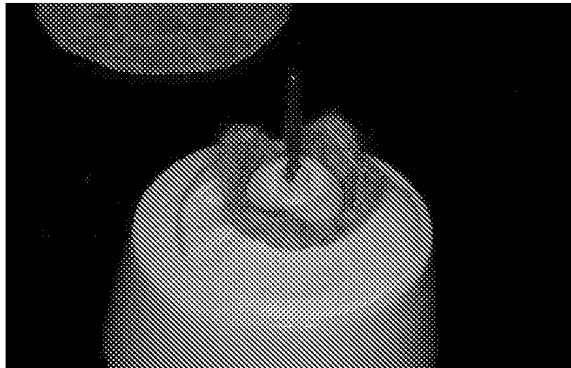
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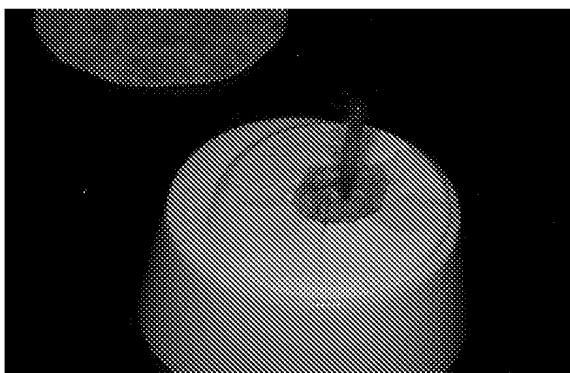
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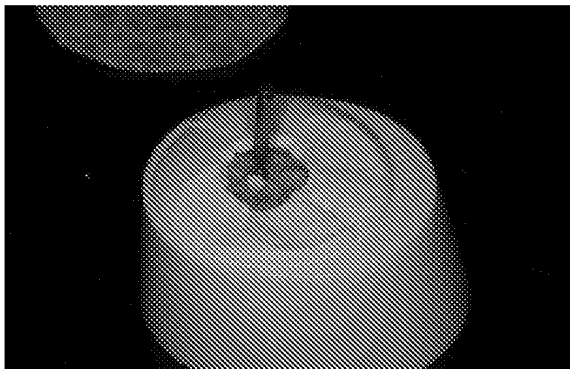
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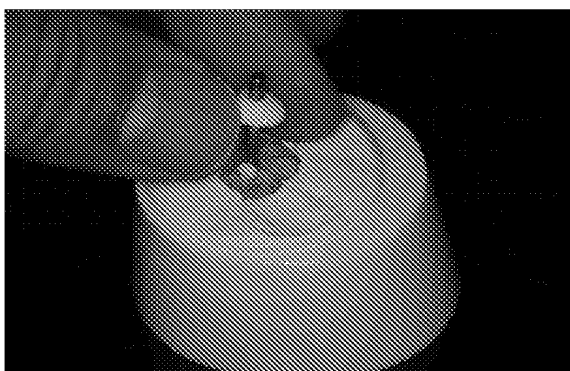
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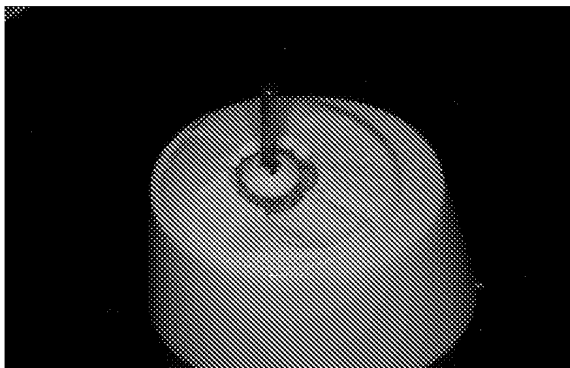
6、軸周囲のスポンジ辺縁を抑え込む



7、シャंक付留め具を軸に貫通



8、留め具を軸に固定してスポンジを抑える



平板状スポンジで芯材を包んで自在な形状を再現！

